Amendment and Response
Applicant: Cory Watkins et al.
Serial No.: 10/073,613
Filed: February 11, 2002
Docket No.: 1552-BZ
Title: CONFOCAL 3D INSPECTION SYSTEM AND PROCESS

IN THE CLAIMS

Please add claims 6 and 7.

Please amend claims 2 and 4 as follows:

1.(Withdrawn) An inspection device including:

a light source;

a pellicle beamsplitter for receiving light from the light source and redirecting said light;

an aperture array for receiving light from the pellicle beamsplitter;

a dual telecentric object reimager including a plurality of lenses;

a telecentric camera imager including a plurality of lenses; and

a camera for collecting focused light.

2.(Currently Amended)   A process of inspecting a surface including bumps thereon, the process comprising:

scanning a surface using optics and a camera capable of determining light intensity for each pixel viewed;

correlating a first pixel with a first surface location;

measuring the light intensity at ~~each~~the first pixel at a first elevation;

measuring the light intensity at ~~each~~the first pixel at a second elevation; and

determining ~~the evaluation~~an elevation of the surface using a Gaussian curve based upon the light intensities measured at the first and second elevations at at least the first~~each~~ pixel upon confirming that the light intensities measured at the first pixel at the first and second elevations are not indicative of an out of focus position.

3.(Previously Presented)   The process of claim 2 further comprising:

scanning at least particular portions of a surface believed to contain protrusions extending outward from the surface using optics and a camera capable of determining light intensity for each pixel viewed;

measuring the light intensity at each pixel at a third elevation;

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measuring the light intensity at each pixel at a fourth elevation; and

determining the elevation of the protrusions using a Gaussian curve based upon the light

intensities measured at the third and fourth elevations at each pixel.

4.(Currently Amended)   The process of claim 3 further comprising:

determining the height of a protrusion by calculating the difference between the

~~evaluation~~elevation of a protrusion and the elevation of the surface.

5.(Previously Presented)   The process of claim 2 wherein an inspection device is used to
perform the scanning and includes:

a light source;

a beamsplitter for receiving light from the light source and redirecting said light;

an aperture array for receiving light from the pellicle beamsplitter;

at least one reimager; and

a camera for collecting focused light.

6. (New)   The process of claim 2, wherein the elevation of the surface is determined based
upon light intensity measurements at the first and second elevations for a plurality of pixels.

7. (New)   The process of claim 2, wherein a unique Gaussian curve is generated based upon
the measure light intensities of the first pixel.